

HYDROELECTRIC PLANT TECHNICIAN SUPERVISOR
CALIFORNIA STATE PERSONNEL BOARD
SPECIFICATION

Schematic Code: --
Class Code: --
Established: --
Revised: --
Title Changed: --

HYDROELECTRIC PLANT TECHNICIAN SUPERVISOR

DEFINITION

This is the supervisory level class in the Hydroelectric Plant Technician series. An incumbent works under general direction to supervise staff who perform a variety of preventive and corrective maintenance tasks associated with protection schemes, monitoring and control equipment, communications and security systems, metering, sensors, computerized and other equipment used in State Water Project (SWP) generating/pumping plants, switchyards, and water conveyance facilities; performs administrative work in support of management goals and objectives; and does other related work as required.

TYPICAL TASKS

Supervises the work of subordinate Hydroelectric Plant Technicians; establishes priorities, staff, and resources needed to maximize productivity and efficiency; prepares weekly work plans; monitors the work of subordinate staff to ensure that it meets quality, quantity and timeliness standards; assigns tasks to subordinate staff based on a consideration of their skills and experience and to ensure that work is completed efficiently and correctly; conducts meetings with subordinates to communicate information that is necessary for job performance; resolves disagreements and conflicts between subordinate staff members to achieve a harmonious, productive working environment; plans and implements measures to improve staff performance; evaluates performance and training needs of subordinate technicians; documents subordinate staff performance using performance evaluations and/or probationary reports to ensure that staff performance is recorded accurately; processes weekly and monthly overtime reports, weekly activity reports and timelines, and employee A&D's; administers and supervises technical work programs involving the testing, calibrating, maintenance, repair, modification and installation of equipment; instructs subordinates in the use, operation and functions of test equipment, testing methods and procedures, and computer analyzing equipment; assists in the training and development of entry-level technicians; attends project technical coordination meetings, annual inspections of POC, etc., and perform miscellaneous administrative duties as required, including reviewing plans and specifications for all new/replacement control system equipment and communication system equipment; assists engineers in establishing, maintaining and administering Protection System standardized testing for all SWP facilities while working cooperatively with the PAMO protection engineers; performs difficult and complex preventive and corrective maintenance tasks associated with protection schemes, monitoring and control equipment, communications and

security systems, metering, sensors, computerized and other equipment used in State Water Project (SWP) generating/pumping plants, switchyards, and water conveyance facilities; performs difficult repairs; leads and instructs subordinates in repairing the circuitry, operation and maintenance of all types of solid state analog and digital control equipment; maintains and updates protective relaying and WECC required calibration schedules, ensuring that they are performed on time; assists engineers in planning equipment evaluation, development of control system operating sequences, preparation of installation procedures, labor and cost estimates for control system equipment replacement; reviews and comments on plans and specifications for new/replacement control/communication system equipment; suggests system design changes and originates Facilities Modification and Change Transmittals; researches, tests, analyzes and reports on the applicable use of new instrumentation; conducts pre-job hazard identification, assessment and control; operates and reads test instruments; records and summarizes test data; performs specialized testing such as Double Test, Hi-Pot Testing, and Corona Probe; performs service interruption investigations after equipment failures; arranges for safe clearances, including directing necessary preparation for test, assuring availability of test instruments and procedures, and submitting work clearance application (WCA); coordinates long term projects with the Planner/Scheduler team; attends production meetings and provides updates relating to equipment repairs and history; plans and schedules preventive maintenance and systems modifications for all computer systems in hydroelectric pumping and generating plants and aqueduct facilities in a Field Division; initiates and receives trouble calls and job requests; investigates SIR's, determines priorities and plans work; directs, coordinates and monitors the work performed by technicians in the Field Divisions, including maintenance of the Control System and associated sub-systems, remote hydrologic monitoring sites, LAN and WAN communications equipment, and the telephone system; monitor the work of subordinate staff to ensure that it meets quality, quantity and timeliness standards; lays out, inspects, schedules and works with a crew in the performance of difficult technical work in connection with the operational and maintenance tests of electrical and mechanical equipment, relays and devices; analyzes test data in order to diagnose malfunctions, to determine performance characteristics of systems, and to evaluate the effects of system modifications; conducts service interruption investigations after equipment failures; participates in inspection matters and provide support to engineering for all local operation and maintenance functions pertaining to the electrical and mechanical functions of the Field Divisions; assists in the identification and creation of an Installed Equipment database for maintenance management purposes; assist with the preparation of the annual Acquisition Plan; assists in preparing budgets and annual procurement plans for equipment, materials, and spare parts; verifies and validates modifications of control and protective circuit modifications on requests based on application of operating knowledge; assures that adequate spare parts, materials, tools and testing equipment are available to efficiently perform the functions of the unit; collaborates with other sections, outside agencies and vendors to identify and correct problems with interconnected systems; develops procedures to implement preventive maintenance (PM) for control systems; responds to trouble calls, including after hours and on weekends, as necessary.

MINIMUM QUALIFICATIONS

Either I

Two years of experience in the California state service performing the duties of a Hydroelectric Plant Technician III.

Or II

Five years of experience performing testing, calibration and maintenance of protections systems, monitoring and control equipment, communications and security systems, metering and sensors similar to those used in generating/pumping plants, switchyards, and water conveyance facilities, including at least one year in a lead capacity; AND

Completion of an approved two-year (60 semester or equivalent quarter units) technical curriculum in electrical, electronic, mechanical or computer-science technology at the community college level, or equivalent. [Additional electrical, electronic, mechanical, or computer-science work experience in an electrical utility or equivalent industrial or military facility, may be substituted for the required education on the basis of one year of experience being equivalent to 15 semester units.]

KNOWLEDGE AND ABILITIES

Knowledge of: personnel procedures to ensure that personnel actions are in compliance with Departmental procedures and policies as well as State laws and regulations; principles and practices of supervision and public administration; mathematics, algebra, trigonometry, and Boolean logic to solve electrical and electronic problems; equipment and procedures for testing, inspection, calibration, installation, troubleshooting, maintenance and repair of control systems, communication systems, network systems, and associated equipment; equipment and procedures for testing electrical, electromechanical and electronic devices associated with large generating and pumping plants and switchyards; test equipment and diagnostic devices (ex. oscilloscopes, multi-meters, counters, power system, logic, network analyzers) to determine, diagnose, and isolate problems or malfunctions in order to make necessary repairs; electronic, electromechanical and hydraulic equipment and procedures for testing and measuring flow, vibration, pressure, temperature, speed, level, and displacement; materials, equipment, and procedures for testing, maintenance and repair of electronic and electromechanical devices; electrical and electronic theory and its application to solve electrical and electronic system problems and to test, maintain and repair electrical and electronic equipment; equipment, procedures, safety and testing requirements for protection systems such as CT, PT, and electromechanical and microprocessor based protective relays; equipment, procedures, safety and testing practices for large-scale distributed supervisory control and data acquisition (SCADA) systems and distributed communication systems; equipment, procedures and testing practices for network and security systems; instrumentation for measuring flow, level, position, temperature, pressure, speed, and vibration; safety, security and reliability practices, including federal and state regulatory mandates as related to hydroelectric facilities and high-voltage equipment; safety procedures for working on high-voltage equipment, including lockout/tag-out procedures; support and maintenance practices for LANs and computer equipment and software for the SWP facilities; technical drawings (ex. one line diagrams, schematics, wiring diagrams and logic diagrams); color code standards for electrical

wiring and components used in the manufacture, configuration, and repair of electrical equipment; hydroelectric facilities and high-voltage testing such as AC power-factor (Doble), DC insulation resistance (Meggar), and AC and DC high potential testing; hydroelectric plant construction, operation and maintenance; electrical and electronic theory as applied to power and pumping plant equipment; departmental personnel policies to ensure that actions are in compliance; department's Affirmative Action Program objectives; and a supervisor's role in the Affirmative Action Program and the processes available to meet affirmative action objectives.

Ability to: supervise and evaluate the work of subordinate technical staff; prioritize and organize work activities of self and others to ensure that all work is completed correctly and in a timely manner; monitor and assess work performed to ensure compliance with Department policy and procedures; set, plan and coordinate various work activities in order to meet deadlines; train others to perform various aspects of the work (ex. Demonstrating proper procedures and techniques and communicating effectively); analyze situations and make recommendations for improvements of performance or reliability of equipment, procedures and practices; make accurate judgments regarding the amount of time a particular task or group of tasks will take to complete; project timelines, deadlines and completion dates; logically analyze a problem from different perspectives and generate potential solutions that are practical and effective; dissect a problem, asses interrelationships among the parts, and draw logical and feasible conclusions; generate ideas or solutions to solve problems or handle non-routine situations; comprehend policies, procedures, orders, rules, and other related written documents/materials to perform the duties of the job; identify potential safety hazards; apply knowledge of existing systems and SWP facilities for the planning of equipment installations or modifications; prepare cost estimates and specifications; anticipate material and equipment needs; participate in technical work of the unit (ex. testing, inspecting, calibrating, installing, troubleshooting, maintaining, and repairing control systems, communication systems, network systems, and related equipment); apply electrical and electronic theory and application to solve electrical and electronic problems and to test, maintain and repair electrical components, equipment and systems; read and interpret technical drawings, documentation and procedures for testing and repairs, and to interpret test results; use a personal computer for standard office applications and specialized troubleshooting; work in an environment that requires strict adherence to instructions, standards, and procedures; wire components and equipment following wiring diagrams or schematics; perform high-voltage insulation tests, performance and efficiency, vibration analysis and infrared scanning of hydroelectric power utility equipment; work quickly and accurately in a high-pressure work environment; legally operate a motor vehicle; and effectively contribute to the department's affirmative action objectives.

SPECIAL REQUIREMENTS

Legally operate a motor vehicle establish a course of action for self and others in order to achieve short-term and long-term goals maintain cooperative working relationships with co-workers; work as a team when necessary to complete the duties of the job in a cohesive and professional manner; provide coaching to staff relating to the tasks of the job to motivate and improve performance; pay close attention to detail in order to ensure the completeness and accuracy of work performed by oneself and/or others; work quickly and accurately in a high-pressure work environment.

SPECIAL REQUIREMENTS

The North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection (CIP) Standard CIP-004 that is part of the Energy Policy Act of 2005 requires the completion of a thorough background investigation. Persons convicted of a felony may not be eligible to compete for, or be appointed to, positions in this class. Under the provisions of NERC CIP Standard CIP-004, any persons unsuccessful in the background investigation may be disqualified from having authorized cyber or authorized unescorted physical access to Critical Cyber Assets (CCA's).